939SLI-eSATA2

User Manual

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(2) this device must accept any interference received, including interference that may cause undesired operation.

ASRock Website: http://www.asrock.com

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1. Introduction

Thank you for purchasing ASRock ***939SLI-eSATA2*** motherboard, a reliable motherboard produced under ASRock's consistently stringent quality control. It delivers excellent performance with robust design conforming to ASRock's commitment to quality and endurance.

In this manual, chapter 1 and 2 contain introduction of the motherboard and step-by-step guide to the hardware installation. Chapter 3 and 4 contain the configuration guide to BIOS setup and information of the Support CD.

Because the motherboard specifications and the BIOS software might be updated, the content of this manual will be subject to change without notice. In case any modifications of this manual occur, the updated version will be available on ASRock website without further notice. You may find the latest VGA cards and CPU support lists on ASRock website as well. ASRock website http://www.asrock.com

1.1 Package Contents

1 x ASRock ***939SLI-eSATA2*** Motherboard
(ATX Form Factor: 12.0-in x 9.6-in, 30.5 cm x 24.4 cm)
1 x ASRock ***939SLI-eSATA2*** Quick Installation Guide
1 x ASRock ***939SLI-eSATA2*** Support CD
1 x Ultra ATA 66/100/133 IDE Ribbon Cable (80-conductor)
1 x 3.5-in Floppy Drive Ribbon Cable
4 x Serial ATA (SATA) Data Cables (Optional)
2 x Serial ATA (SATA) HDD Power Cables (Optional)
1 x ASRock eSATAII I/O Shield

1.2 Specifications

Platform	- ATX Form Factor: 12.0-in x 9.6-in, 30.5 cm x 24.4 cm
CPU	- 939-Pin Socket Supporting AMD Athlon™ 64 / 64FX / 64X2 Processor - Supports AMD's Cool 'n' Quiet™ Technology (see **CAUTION 1**) - FSB 1000 MHz (2.0 GT/s) - Supports Untied Overclocking Technology (see **CAUTION 2**) - Supports Hyper-Transport Technology
Chipset	- ULi® M1697
Memory	- Dual Channel DDR Memory Technology (see **CAUTION 3**) - 4 x DDR DIMM slots - Support DDR400/333/266 - Max. capacity: 4GB
Hybrid Booster	- CPU Frequency Stepless Control (see **CAUTION 4**) - ASRock U-COP (see **CAUTION 5**) - Boot Failure Guard (B.F.G.)
Expansion Slot	- 1 x Future CPU Port (Supports CPU upgrade from AMD K8 939-Pin CPU to AM2 940-Pin CPU through AM2CPU Board) (see page **16** for details) - 3 x PCI slots - 1 x PCI Express x 16 / x 8 slot - 1 x PCI Express x 1 / x 8 slot - 1 x PCI Express x 1 slot - Supports NVIDIA SLI™ (see **CAUTION 6**)
Audio	- Realtek ALC 660 5.1channel CODEC with High Definition Audio
LAN	- Realtek PHY RTL8201CL - Speed: 10/100 Ethernet - Supports Wake-On-LAN
Rear Panel I/O	ASRock eSATAII I/O - 1 x PS/2 Mouse Port - 1 x PS/2 Keyboard Port - 1 x Serial Port: COM1 - 1 x Parallel Port (ECP/EPP Support) - 4 x Ready-to-Use USB 2.0 Ports - 2 x eSATAII Ports - 1 x RJ-45 Port - Audio Jack: Line in / Line out / Microphone

Connector	- 4 x Serial ATAII 3.0Gb/s connectors, support RAID (RAID 0, 1, 0+1, JBOD, 5) and “Hot Plug” functions (see **CAUTION 7**) - 2 x eSATAII 3.0Gb/s connectors (shared with 2 SATAII connectors), support “Hot Plug” function (see **CAUTION 8**) - 2 x ATA133 IDE connectors (support 4 x IDE devices) - 1 x Floppy connector - 1 x IR header - 1 x Game header - CPU/Chassis FAN connector - 20 pin ATX power connector - 4 pin 12V power connector - SLI/XFIRE power connector - CD in header - Front panel audio connector - 2 x USB 2.0 headers (support 4 USB 2.0 ports) (see **CAUTION 9**)
BIOS Feature	- 2Mb AMI BIOS - AMI Legal BIOS - Supports “Plug and Play” - ACPI 1.1 Compliance Wake Up Events - Supports jumperfree - SMBIOS 2.3.1 Support
Support CD	- Drivers, Utilities, AntiVirus Software
Hardware Monitor	- CPU Temperature Sensing - Motherboard Temperature Sensing - CPU Overheat Shutdown to Protect CPU Life - CPU Fan Tachometer - Chassis Fan Tachometer - Voltage Monitoring: +12V, +5V, +3.3V, Vcore
OS	- Microsoft® Windows® 2000 / XP / XP 64-bit compliant
Certifications	- FCC, CE, Microsoft® WHQL Certificated

CAUTION!

1. For power-saving's sake, it is strongly recommended to enable AMD's Cool 'n' Quiet™ technology under Windows system. See APPENDIX on page 50 to enable AMD's Cool 'n' Quiet™ technology. Since not all K8 939-pin CPU can support AMD's Cool 'n' Quiet™ technology, please check AMD's website for details.
2. This motherboard supports Untied Overclocking Technology. Please read "Untied Overclocking Technology" on page 31 for details.
3. This motherboard supports Dual Channel Memory Technology. Before you implement Dual Channel Memory Technology, make sure to read the installation guide of memory modules on page 14 for proper installation.
4. Although this motherboard offers stepless control, it is not recommended to perform over-clocking. Frequencies other than the recommended CPU bus frequencies may cause the instability of the system or damage the CPU.
5. While CPU overheat is detected, the system will automatically shutdown. Before you resume the system, please check if the CPU fan on the motherboard functions properly and unplug the power cord, then plug it back again. To improve heat dissipation, remember to spray thermal grease between the CPU and the heatsink when you install the PC system.
6. This motherboard supports NVIDIA SLI™ technology, please read "Dual Graphics Feature" on page 18 for jumper settings. PCIE3 slot is intended for SLI™ function. If you plan to install only one PCI Express VGA card to this motherboard, please install it to PCIE1 slot. For the information of the compatible SLI™ Mode PCI Express VGA cards, please refer to the "Supported PCI Express VGA Card List for SLI™ Mode" on page 9. For the proper installation of PCI Express VGA card, please refer to the installation guide on page 16.
7. Before installing SATAII hard disk to SATAII connector, please read the "SATAII Hard Disk Setup Guide" on page 27 to adjust your SATAII hard disk drive to SATAII mode. Besides, you are allowed to downgrade the SATAII hard disk to SATA hard disk (from SATAII 3Gb/s down to SATA 1.5Gb/s), and connect it to the SATAII connector. You can also connect SATA hard disk to SATAII connector directly.
8. This motherboard supports eSATAII interface, the external SATAII specification. Please read "eSATAII Interface Introduction" on page 24 for details about eSATAII and eSATAII installation procedures. (Port Multiplier Technology is not supported with eSATAII interface on this motherboard.)
9. Power Management for USB 2.0 works fine under Microsoft® Windows® XP SP1 or SP2 / 2000 SP4.

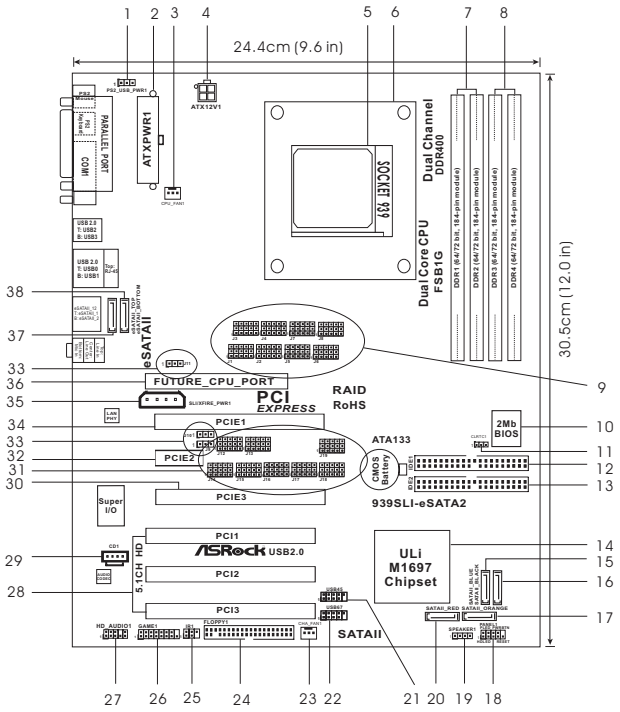
1.3 Supported PCI Express VGA Card List for SLI™ Mode

(for Windows XP / XP 64-bit only)

Graphics Chip Vendor	Model Name	Chipset Name
NVIDIA	ASUS EN6600	GeForce 6600
	ASUS EN6600GT Series	GeForce 6600GT
	ASUS EN6800OLE	GeForce 6800LE
	ASUS EN6800GT	GeForce 6800GT
	ASUS EN7800GTX/2DHTV	GeForce 7800GTX

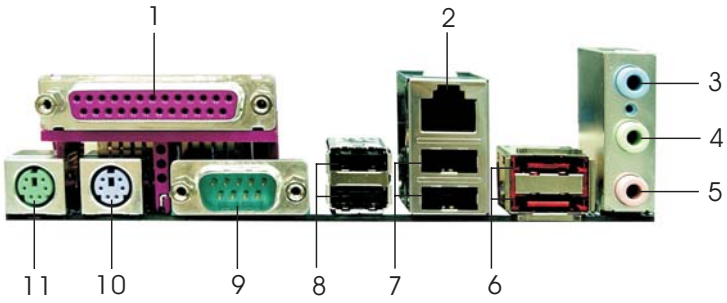
For the latest updates of the supported PCI Express VGA card list for SLI™ Mode, please visit our website for details.
ASRock website: http://www.asrock.com/support/index.htm

1.4 Motherboard Layout



1	PS2_USB_PWR1 Jumper	19	Chassis Speaker Header (SPEAKER 1)
2	ATX Power Connector (ATXPWR1)	20	Serial ATAII Connector (SATAII_RED)
3	CPU Fan Connector (CPU_FAN1)	21	USB 2.0 Header (USB45, Blue)
4	ATX 12V Power Connector (ATX12V1)	22	USB 2.0 Header (USB67, Blue)
5	939-Pin CPU Socket	23	Chassis Fan Connector (CHA_FAN1)
6	CPU Heatsink Retention Module	24	Floppy Connector (FLOPPY1)
7	2 x 184-pin DDR DIMM Slots (Dual Channel A: DDR1, DDR2; Blue)	25	Infrared Module Header (IR1)
		26	Game Port Header (GAME1)
8	2 x 184-pin DDR DIMM Slots (Dual Channel B: DDR3, DDR4; Black)	27	Front Panel Audio Header (HD_AUDIO1)
		28	PCI Slots (PCI1- 3)
9	J1 / J2 / J3 / J4 / J5 / J6 / J7 / J8 Jumpers	29	Internal Audio Connector: CD1 (Black)
10	Flash Memory	30	PCI Express x 1 / x 8 Slot (PCIE3)
11	Clear CMOS Jumper (CLRTC1)	31	J12 / J13 / J14 / J15 / J16 / J17 / J18 / J19 Jumpers
12	Primary IDE Connector (IDE1, Blue)	32	PCI Express x 1 Slot (PCIE2)
13	Secondary IDE Connector (IDE2, Black)	33	J9 / J10 / J11 Jumpers
14	ULi M1697 Single Chip	34	PCI Express x 16 / x 8 Slot (PCIE1)
15	Serial ATAII Connector (SATAII_BLUE)	35	SLI / XFIRE Power Connector
16	Serial ATAII Connector (SATAII_BLACK)	36	Future CPU Port (FUTURE_CPU_PORT1)
17	Serial ATAII Connector (SATAII_ORANGE)	37	eSATAII Connector (eSATAII_TOP)
18	System Panel Header (PANEL1)	38	eSATAII Connector (eSATAII_BOTTOM)

1.5 ASRock eSATAII I/O



1	Parallel Port	7	USB 2.0 Ports (USB01)
2	RJ-45 Port	8	USB 2.0 Ports (USB23)
3	Line In (Light Blue)	9	COM Port
4	Line Out (Lime)	10	PS/2 Keyboard Port (Purple)
5	Microphone (Pink)	11	PS/2 Mouse Port (Green)
6	eSATAII Ports		

2. Installation

939SLI-eSATA2 is an ATX form factor (12.0-in x 9.6-in, 30.5 cm x 24.4 cm) motherboard. Before you install the motherboard, study the configuration of your chassis to ensure that the motherboard fits into it.

Pre-installation Precautions

Take note of the following precautions before you install motherboard components or change any motherboard settings.

Before you install or remove any component, ensure that the power is switched off or the power cord is detached from the power supply. Failure to do so may cause severe damage to the motherboard, peripherals, and/or components.

1. Unplug the power cord from the wall socket before touching any component.
2. To avoid damaging the motherboard components due to static electricity, NEVER place your motherboard directly on the carpet or the like. Also remember to use a grounded wrist strap or touch a safety grounded object before you handle components.
3. Hold components by the edges and do not touch the ICs.
4. Whenever you uninstall any component, place it on a grounded anti-static pad or in the bag that comes with the component.
5. When placing screws into the screw holes to secure the motherboard to the chassis, please do not over-tighten the screws! Doing so may damage the motherboard.

2.1 CPU Installation

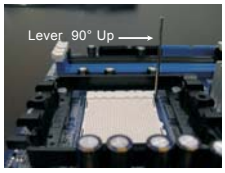
Step 1. Unlock the socket by lifting the lever up to a 90° angle.

Step 2. Position the CPU directly above the socket such that the CPU corner with the golden triangle matches the socket corner with a small triangle.

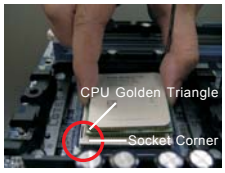
Step 3. Carefully insert the CPU into the socket until it fits in place.

The CPU fits only in one correct orientation. DO NOT force the CPU into the socket to avoid bending of the pins.

Step 4. When the CPU is in place, press it firmly on the socket while you push down the socket lever to secure the CPU. The lever clicks on the side tab to indicate that it is locked.



STEP 1:
Lift Up The Socket Lever



STEP 2 / STEP 3:
Match The CPU Golden Triangle To The Socket Corner

STEP 4:
Push Down And Lock The Socket Lever

2.2 Installation of CPU Fan and Heatsink

After you install the CPU into this motherboard, it is necessary to install a larger heatsink and cooling fan to dissipate heat. You also need to spray thermal grease between the CPU and the heatsink to improve heat dissipation. Make sure that the CPU and the heatsink are securely fastened and in good contact with each other. Then connect the CPU fan to the CPU FAN connector (CPU_FAN1, see Page 10, No. 3). For proper installation, please kindly refer to the instruction manuals of the CPU fan and the heatsink.

2.3 Installation of Memory Modules (DIMM)

939SLI-eSATA2 motherboard provides four 184-pin DDR (Double Data Rate) DIMM slots, and supports Dual Channel Memory Technology. For dual channel configuration, you always need to install **identical** (the same brand, speed, size and chip-type) DDR DIMM pair in the slots of the same color. In other words, you have to install **identical** DDR DIMM pair in **Dual Channel A** (DDR1 and DDR2; Blue slots; see p.10 No.7) or **identical** DDR DIMM pair in **Dual Channel B** (DDR3 and DDR4; Black slots; see p.10 No.8), so that Dual Channel Memory Technology can be activated. This motherboard also allows you to install four DDR DIMMs for dual channel configuration, and please install **identical** DDR DIMMs in all four slots. You may refer to the Dual Channel Memory Configuration Table below.

Dual Channel Memory Configurations

	DDR1 (Blue Slot)	DDR2 (Blue Slot)	DDR3 (Black Slot)	DDR4 (Black Slot)
(1)	Populated	Populated	-	-
(2)	-	-	Populated	Populated
(3)*	Populated	Populated	Populated	Populated

* For the configuration (3), please install **identical** DDR DIMMs in all four slots.

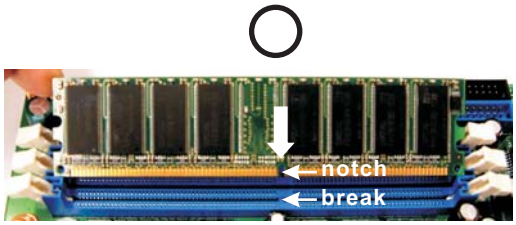
1. If you want to install two memory modules, for optimal compatibility and reliability, it is recommended to install them in the slots of the same color. In other words, install them either in the set of blue slots (DDR1 and DDR2), or in the set of black slots (DDR3 and DDR4).
2. If only one memory module or three memory modules are installed in the DDR DIMM slots on this motherboard, it is unable to activate the Dual Channel Memory Technology.
3. If a pair of memory modules is NOT installed in the same Dual Channel, for example, installing a pair of memory modules in DDR1 and DDR3, it is unable to activate the Dual Channel Memory Technology .

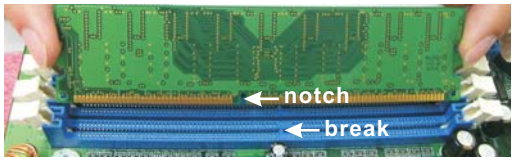
Installing a DIMM

Please make sure to disconnect power supply before adding or removing DIMMs or the system components.

Step 1. Unlock a DIMM slot by pressing the retaining clips outward.

Step 2. Align a DIMM on the slot such that the notch on the DIMM matches the break on the slot.





The DIMM only fits in one correct orientation. It will cause permanent damage to the motherboard and the DIMM if you force the DIMM into the slot at incorrect orientation.

Step 3. Firmly insert the DIMM into the slot until the retaining clips at both ends fully snap back in place and the DIMM is properly seated.

2.4 Expansion Slots

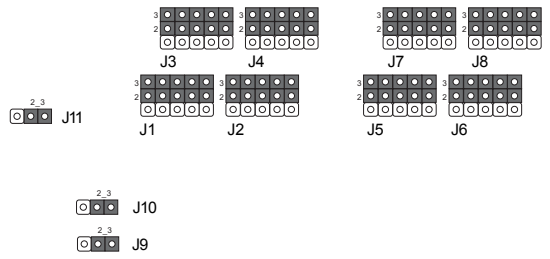
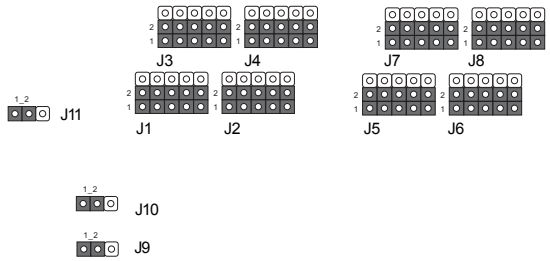
(Future CPU Port, PCI Slots and PCIE Slots)

There are 1 Future CPU Port, 3 PCI slots and 3 PCI Express slots on ***939SLI-eSATA2*** motherboard.

Future CPU Port (Yellow-Colored Port):

Future CPU Port allows you to upgrade your AMD K8 939-Pin CPU to AM2 940-Pin CPU by installing an add-on ASRock **AM2CPU Board** into this future CPU Port on ***939SLI-eSATA2*** motherboard. Before you upgrade the K8 939-Pin CPU to AM2 940-Pin CPU, it is necessary to adjust the jumper settings for those required jumpers on ***939SLI-eSATA2*** motherboard. Please refer to the table below for the correct jumper settings.

This yellow-colored Future CPU Port is not an AGP slot! Please do NOT insert any AGP card into it!

CPU Type	Jumper Settings
K8 939-Pin CPU (Default)	
AM2 940-Pin CPU (Using add-on ASRock **AM2CPU Board**)	

NOTE

When adjusting the jumper settings, you may use the tool, Jumper Cap Remover, to help you removing the jumper caps more easily. This Jumper Cap Remover is bundled in your motherboard package, and please follow the “Jumper Cap Remover Instruction” to use it properly.

PCI Slots: PCI slots are used to install expansion cards that have the 32-bit PCI interface.

PCIE Slots: PCIE1 (PCIE x 16 / x 8 slot) is used for PCI Express cards with x16 lane width graphics cards.
PCIE2 (PCIE x 1 slot) is used for PCI Express cards, such as Gigabit LAN card, SATA2 card, etc.
PCIE3 (PCIE x 1 / x 8 slot) is used to install PCI Express expansion cards. For the information of the compatible SLI™ Mode PCI Ex press VGA cards, please refer to the "Supported PCI Express VGA Card List for SLI™ Mode" on page 9. Please check the jumper set tings on page 18 for different functions.

PCIE3 slot is intended for SLI™ function. If you plan to install only one PCI Express VGA card to this motherboard, please install it to PCIE1 slot.

Installing an expansion card

Step 1. Before installing the expansion card, please make sure that the power supply is switched off or the power cord is unplugged. Please read the documentation of the expansion card and make necessary hardware settings for the card before you start the installation.

Step 2. Remove the system unit cover (if your motherboard is already installed in a chassis).

Step 3. Remove the bracket facing the slot that you intend to use. Keep the screws for later use.

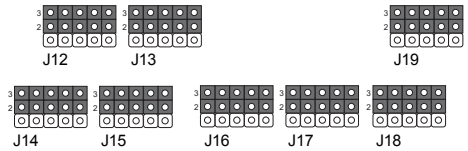
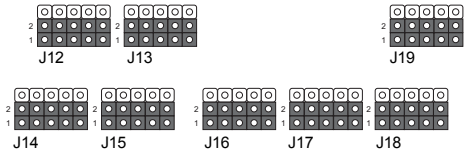
Step 4. Align the card connector with the slot and press firmly until the card is completely seated on the slot.

Step 5. Fasten the card to the chassis with screws.

Step 6. Replace the system cover.

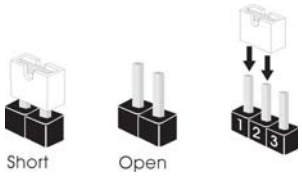
2.5 Dual Graphics Feature

This motherboard supports Dual Graphics Technology. When installing the add-on VGA cards to this motherboard, you are allowed to choose two different ways to decide the function of PCIE1 slot and PCIE3 slot. The default value of this feature is to enable PCIE1 slot (PCI Express x 16) and PCIE3 slot (only PCI Express x 1). You can also adjust the jumpers according to the below table to enable PCIE1 slot (PCI Express x 8) and PCIE3 slot (PCI Express x 8). In other words, you are able to adjust the jumpers to enjoy the benefit of Dual Graphics feature. Please refer to the table below for the correct jumper settings.

Function	Jumper Settings
Enable PCIE1 (PCIE x 16) / PCIE3 (only PCIE x 1) (Default)	
Enable PCIE1 (PCIE x 8) / PCIE3 (PCIE x 8)	

2.6 Jumpers Setup

The illustration shows how jumpers are setup. When the jumper cap is placed on pins, the jumper is “Short”. If no jumper cap is placed on pins, the jumper is “Open”. The illustration shows a 3-pin jumper whose pin1 and pin2 are “Short” when jumper cap is placed on these 2 pins.



Jumper	Setting	
PS2_USB_PWR1 (see p.10, No. 1)	1_2 +5V / 2_3 +5VSB	Short pin2, pin3 to enable +5VSB (standby) for PS/2 or USB wake up events.

Note: To select +5VSB, it requires 2 Amp and higher standby current provided by power supply.

Clear CMOS Jumper (CLRTC1) (see p.10, No. 11)	1_2 Default / 2_3 Clear CMOS	

Note: CLRTC1 allows you to clear the data in CMOS. The data in CMOS includes system setup information such as system password, date, time, and system setup parameters. To clear and reset the system parameters to default setup, please turn off the computer and unplug the power cord from the power supply. After waiting for 15 seconds, use a jumper cap to short pin2 and pin3 on CLRTC1 for 5 seconds.

2.7 Onboard Headers and Connectors

Onboard headers and connectors are NOT jumpers. Do NOT place jumper caps over these headers and connectors. Placing jumper caps over the headers and connectors will cause permanent damage of the motherboard!

•

Floppy Connector (33-pin FLOPPY1) (see p.10 No. 24)	Pin1 FLOPPY1	the red-striped side to Pin1

Note: Make sure the red-striped side of the cable is plugged into Pin1 side of the connector.

Primary IDE Connector (Blue)
(39-pin IDE1, see p.10 No. 12)

Secondary IDE Connector (Black)
(39-pin IDE2, see p.10 No. 13)

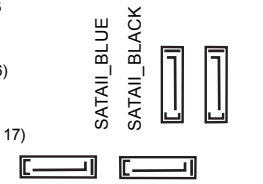
connect the blue end to the motherboard

connect the black end to the IDE devices

80-conductor ATA 66/100/133 cable

Note: If you use only one IDE device on this motherboard, please set the IDE device as "Master". Please refer to the instruction of your IDE device vendor for the details. Besides, to optimize compatibility and performance, please connect your hard disk drive to the primary IDE connector (IDE1, blue) and CD-ROM to the secondary IDE connector (IDE2, black).

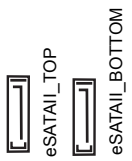
Serial ATA II Connectors
(SATAII_BLUE: see p.10, No. 15)
(SATAII_BLACK: see p.10, No. 16)
(SATAII_RED: see p.10, No. 20)
(SATAII_ORANGE: see p.10, No. 17)



These four Serial ATA II (SATAII) connectors support SATA data cables for internal storage devices. The current SATA II interface allows up to 3.0 Gb/s data transfer rate.

SATAII_RED and SATAII_ORANGE connectors can be used for internal storage devices or be connected to eSATAII_BOTTOM and eSATAII_TOP connectors with corresponding color to support eSATAII devices. Please read "eSATAII Interface Introduction" on page 24 for details about eSATAII and eSATAII installation procedures.

eSATA II Connectors
(eSATAII_TOP: see p.10, No. 37)
(eSATAII_BOTTOM: see p.10, No. 38)

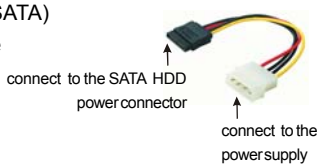


These two eSATA II connectors support SATA data cables for external SATAII function. The current eSATA II interface allows up to 3.0 Gb/s data transfer rate.

Serial ATA (SATA) Data Cable

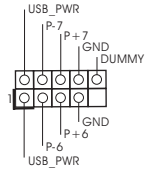
Either end of the SATA data cable can be connected to the SATA / SATAII hard disk or the SATAII connector on the motherboard. You can also use the SATA data cable to connect SATAII connectors and eSATAII connectors with corresponding color.

Serial ATA (SATA) Power Cable (Optional)



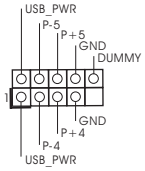
Please connect the black end of SATA power cable to the power connector on each drive. Then connect the white end of SATA power cable to the power connector of the power supply.

USB 2.0 Header (9-pin USB67) (see p.10 No. 22)



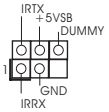
ASRock eSATAII I/O accommodates 4 default USB 2.0 ports. If those USB 2.0 ports on the I/O panel are not sufficient, this USB 2.0 header is available to support 2 additional USB 2.0 ports.

USB 2.0 Header (9-pin USB45) (see p.10 No. 21)



ASRock eSATAII I/O accommodates 4 default USB 2.0 ports. If those USB 2.0 ports on the I/O panel are not sufficient, this USB 2.0 header is available to support 2 additional USB 2.0 ports.

Infrared Module Header (5-pin IR1) (see p.10 No. 25)



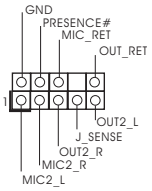
This header supports an optional wireless transmitting and receiving infrared module.

Internal Audio Connectors (4-pin CD1) (CD1: see p.10 No. 29)

CD1

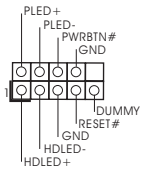
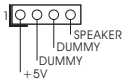
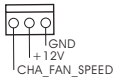
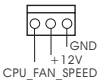
This connector allows you to receive stereo audio input from sound sources such as a CD-ROM, DVD-ROM, TV tuner card, or MPEG card.

Front Panel Audio Header (9-pin HD_AUDIO1) (see p.10 No. 27)



This is an interface for front panel audio cable that allows convenient connection and control of audio devices.

1. High Definition Audio supports Jack Sensing, but the panel wire on the chassis must support HDA to function correctly. Please follow the instruction in our manual and chassis manual to install your system.
2. If you use AC'97 audio panel, please install it to the front panel audio header as below:
   A. Connect Mic_IN (MIC) to MIC2_L.
   B. Connect Audio_R (RIN) to OUT2_R and Audio_L (LIN) to OUT_L.
   C. MIC_RET and OUT_RET are for HD audio panel only. You don't need to connect them for AC'97 audio panel.
   D. Connect PRESENCE# pin to GND to enable front panel audio.

System Panel Header (9-pin PANEL1) (see p.10 No. 18)		This header accommodates several system front panel functions.
Chassis Speaker Header (4-pin SPEAKER 1) (see p.10 No. 19)		Please connect the chassis speaker to this header.
Chassis Fan Connector (3-pin CHA_FAN1) (see p.10 No. 23)		Please connect a chassis fan cable to this connector and match the black wire to the ground pin.
CPU Fan Connector (3-pin CPU_FAN1) (see p.10 No. 3)		Please connect a CPU fan cable to this connector and match the black wire to the ground pin.
ATX Power Connector (20-pin ATXPWR1) (see p.10 No. 2)		Please connect an ATX power supply to this connector.
ATX 12V Connector (4-pin ATX12V1) (see p.10 No. 4)		Please connect an ATX 12V power supply to this connector.

SLI/XFIRE Power Connector

(4-pin SLI/XFIRE_POWER1)

(see p.10 No. 35)

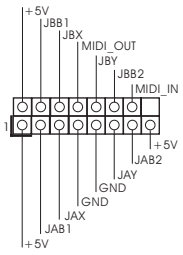
SLI/XFIRE_POWER1

It is not necessary to use this connector, but please connect it with a hard disk power connecor when two graphics cards are plugged to this motherboard at the same time.

Game Port Header

(15-pin GAME1)

(see p.10 No. 26)



Connect a Game cable to this header if the Game port bracket is installed.

2.8 eSATAII Interface Introduction

What is eSATAII?

This motherboard supports eSATAII interface, the external SATAII specification. eSATAII allows you to enjoy the SATAII function provided by the I/O of your computer, offering the high speed data transfer rate up to 3.0Gb/s, and the convenient mobility like USB. eSATAII is equipped with Hot Plug capability that enables you to exchange drives easily. For example, with eSATAII interface, you may simply plug your eSATAII hard disk to the eSATAII ports instead of opening your chassis to exchange your SATAII hard disk. Currently, on the market, the data transfer rate of USB 2.0 is up to 480Mb/s, and for IEEE 1394 is up to 400Mb/s. However, eSATAII provides the data transfer rate up to 3000Mb/s, which is much higher than USB 2.0 and IEEE 1394, and still keeps the convenience of Hot Plug feature. Therefore, on the basis of the advantageous transfer speed and the facilitating mobile capability, in the near future, eSATAII will replace USB 2.0 and IEEE 1394 to be a trend for external interface.

How to install eSATAII?

SATAII_RED and
SATAII_ORANGE

eSATAII_TOP and
eSATAII_BOTTOM

1. If you just plan to install one eSATAII device to this motherboard, it is recommended to enable the bottom eSATAII port of the I/O shield. In order to enable the bottom eSATAII port of the I/O shield, you need to connect the red SATAII connector (SATAII_RED; see p.10 No.20) and the red eSATAII connector (eSATAII_BOTTOM; see p.10 No.38) with a SATA data cable first. Then the bottom eSATAII port of the I/O shield is enabled.

Connect the SATA data cable to the red SATAII connector (SATAII_RED)

Connect the SATA data cable to the red eSATAII connector (eSATAII_BOTTOM)

2. If you plan to install two eSATAII devices to this motherboard, you need to enable both the top and the bottom eSATAII ports of the I/O shield. In order to enable the top and the bottom eSATAII ports of the I/O shield, you have to connect the red SATAII connector (SATAII_RED; see p.10 No.20) and the red eSATAII connector (eSATAII_BOTTOM; see p.10 No.38) with a SATA data cable first, and then connect the orange SATAII connector (SATAII_ORANGE; see p.10 No.17) and the orange eSATAII connector (eSATAII_TOP; see p.10 No.37) with another SATA data cable. After that, both the top and the bottom eSATAII ports of the I/O shield are enabled.

Connect the SATA data cables to both red SATAII connector (SATAII_RED) and orange SATAII connector (SATAII_ ORANGE)

Connect the SATA data cables to both red eSATAII connector (eSATAII_BOTTOM) and orange eSATAII connector (eSATAII_TOP)

Please make sure to correctly connect the SATAII and eSATAII connectors with corresponding color so that the eSATAII function will work successfully.

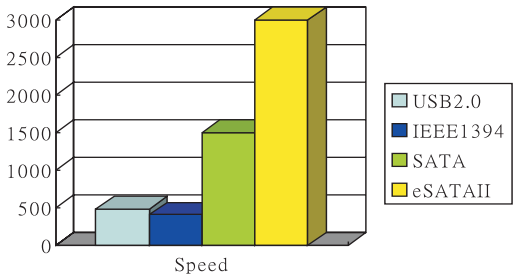
3. Use the eSATAII device cable to connect eSATAII device and the eSATAII port of the I/O shield according to the eSATAII port that you enable.

Connect one end of the eSATAII device cable to eSATAII device

Connect the other end of the eSATAII device cable to eSATAII port of the I/O shield

Comparison between eSATAII and other devices

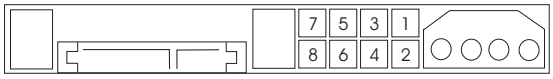
IEEE 1394	400Mb/s
USB 2.0	480Mb/s
SATA	1.5Gb/s (1500Mb/s)
eSATAII/SATAII	3.0Gb/s (3000Mb/s)



2.9 SATAII Hard Disk Setup Guide

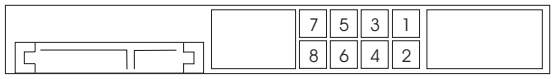
Before installing SATAII hard disk to your computer, please carefully read below SATAII hard disk setup guide. Some default setting of SATAII hard disks may not be at SATAII mode, which operate with the best performance. In order to enable SATAII function, please follow the below instruction with different vendors to correctly adjust your SATAII hard disk to SATAII mode in advance; otherwise, your SATAII hard disk may fail to run at SATAII mode.

Western Digital



If pin 5 and pin 6 are shorted, SATA 1.5Gb/s will be enabled.
On the other hand, if you want to enable SATAII 3.0Gb/s, please remove the jumpers from pin 5 and pin 6.

SAMSUNG



If pin 3 and pin 4 are shorted, SATA 1.5Gb/s will be enabled.
On the other hand, if you want to enable SATAII 3.0Gb/s, please remove the jumpers from pin 3 and pin 4.

HITACHI

Please use the Feature Tool, a DOS tool, for changing various ATA features. Please visit HITACHI's website for details:

http://www.hitachigst.com/hdd/support/download.htm

The above examples are just for your reference. For different SATAII hard disk products of different vendors, the jumper pin setting methods may not be the same. Please visit the vendors' website for the updates.

2.10 Serial ATA (SATA) / Serial ATAII (SATAII) Hard Disks Installation

This motherboard adopts ULi M1697 chipset that supports Serial ATA (SATA) / Serial ATAII (SATAII) hard disks and RAID (RAID 0, RAID 1, RAID 0+1, JBOD, and RAID 5) functions. You may install SATA / SATAII hard disks on this motherboard for internal storage devices. This section will guide you to install the SATA / SATAII hard disks.

STEP 1: Install the SATA / SATAII hard disks into the drive bays of your chassis.
STEP 2: Connect the SATA power cable to the SATA / SATAII hard disk.
STEP 3: Connect one end of the SATA data cable to the motherboard's SATAII connector.
STEP 4: Connect the other end of the SATA data cable to the SATA / SATAII hard disk.

1. If you plan to use RAID 0, RAID 1, or JBOD functions, you need to install at least 2 SATA / SATAII hard disks. If you plan to use RAID 5 function, you need to install at least 3 SATA / SATAII hard disks. If you plan to use RAID 0+1 function, you need to install at least 4 SATA / SATAII hard disks. If you install 2 eSATAII devices, then only RAID 0, RAID 1, or JBOD functions will be enabled.
2. If you plan to use RAID functions on SATA / SATAII, SATA / SATAII HDDs must be operated in "RAID" mode.
3. "RAID" and "non-RAID" mode are options under "SATA Operation Mode" in BIOS setup. Please refer to page 40 for details.

2.11 Hot Plug and Hot Swap Functions for SATA / SATAII HDDs and eSATAII Devices

939SLI-eSATA2 motherboard supports Hot Plug and Hot Swap functions for SATA / SATAII / eSATAII Devices in RAID / AHCI mode. ULi M1697 chipset provides hardware support for Advanced Host controller Interface (AHCI), a new programming interface for SATA host controllers developed thru a joint industry effort. AHCI also provides usability enhancements such as Hot Plug. AHCI requires appropriate software support (e.g., an AHCI driver, which is contained in our support CD).

NOTE

What is Hot Plug Function?

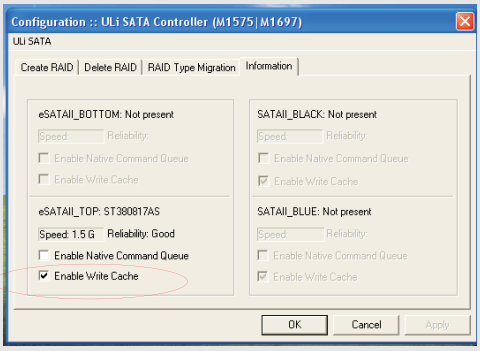
If the SATA / SATAII HDDs are NOT set for RAID configuration, it is called "Hot Plug" for the action to insert and remove the SATA / SATAII HDDs while the system is still power-on and in working condition.
However, please note that it cannot perform Hot Plug if the OS has been installed into the SATA / SATAII HDD.

What is Hot Swap Function?

If SATA / SATAII HDDs are built as RAID1 then it is called "Hot Swap" for the action to insert and remove the SATA / SATAII HDDs while the system is still power-on and in working condition.

eSATAII is equipped with Hot Plug capability that enables you to exchange drives easily. For example, with eSATAII interface, you may simply plug your eSATAII devices to the eSATAII ports instead of opening your chassis to exchange your SATAII hard disk.

If you obey "safely remove hardware" mechanism like USB flash drive, you can enable eSATAII device write cache on the driver by ULi RAID configuration tools to enhance the eSATAII performance. While keeping write data to disk can be flush out when removing the eSATAII device.



2.12 Using SATA / SATAII HDDs With RAID Functions

If you want to install Windows 2000, Windows XP, or Windows XP 64-bit OS on your SATA / SATAII HDDs with RAID functions, you need to make a SATA / SATAII driver diskette before you start the OS installation.

STEP 1: Insert the ASRock Support CD into your optical drive to boot your system. (Do NOT insert any floppy diskette into the floppy drive at this moment!)

STEP 2: During POST at the beginning of system boot-up, press <F11> key, and then a window for boot devices selection appears. Please select CD-ROM as the boot device.

STEP 3: When you see the message on the screen, “Do you want to generate Serial ATA driver diskette [YN]?”, press <Y>.

STEP 4: Then you will see these messages,

Please insert a diskette into the floppy drive.
WARNING! Formatting the floppy diskette will
lose ALL data in it!
Start to format and copy files [YN]?

Please insert a floppy diskette into the floppy drive, and press <Y>.

STEP 5: The system will start to format the floppy diskette and copy SATA / SATAII drivers into the floppy diskette.

Once you have the SATA / SATAII driver diskette ready, you may start to install Windows 2000 / Windows XP / Windows XP 64-bit on your system directly without setting the RAID configuration on your system, or you may start to use “RAID Installation Guide” to set RAID 0 / RAID 1 / RAID 0+1 / JBOD / RAID 5 configuration before you install the OS. Before you start to configure the RAID function, you need to check the installation guide in the Support CD for proper configuration. Please find the document, “Guide to SATA Hard Disks Installation and RAID Configuration”, at the following path in the Support CD:

.. \ Information \ Manual \ RAID Installation Guide \ English.pdf

2.13 Using SATA / SATAII HDDs Without RAID Functions

If you want to install Windows 2000, Windows XP, or Windows XP 64-bit OS on your SATA / SATAII HDDs without RAID functions, you are allowed to choose non-RAID mode or AHCI mode. For users who plan to install Windows 2000, Windows XP, or Windows XP 64-bit OS on your SATA / SATAII HDDs without RAID and Hot Plug functions, please choose non-RAID mode. However, if you plan to install Windows 2000, Windows XP, or Windows XP 64-bit OS on your SATA / SATAII HDDs without RAID functions but still keeping Hot Plug function, please choose AHCI mode.
Please follow the below procedures for selecting the mode you need.

A. Using SATA / SATAII HDDs Operating in Non-RAID Mode

1. Enter “SATA Operation Mode” in BIOS setup to set the option from [RAID] to [non-RAID].
2. Start Windows 2000, windows XP, or Windows XP 64-bit OS installation.

B. Using SATA / SATAII HDDs Operating in AHCI Mode

1. Enter “SATA Operation Mode” in BIOS setup to set the option from [RAID] to [AHCI].
2. Make a SATA / SATAII driver diskette by following the proper steps of section 2.12 on page 30.
3. Start Windows 2000, windows XP, or Windows XP 64-bit OS installation.

2.14 Untied Overclocking Technology

This motherboard supports Untied Overclocing Technology, which means during overclocking, FSB enjoys better margin due to fixed PCI / PCIE buses. Before you enable Untied Overclocking function, please enter “Overclock Mode” option of BIOS setup to set the selection from [Auto] to [CPU, PCIE, Async.]. Therefore, CPU FSB is untied during overclocking, but PCI and PCIE buses are in the fixed mode so that FSB can operate under a more stable overclocking environment.

3. BIOS SETUP UTILITY

3.1 Introduction

This section explains how to use the BIOS SETUP UTILITY to configure your system. The Flash Memory on the motherboard stores the BIOS SETUP UTILITY. You may run the BIOS SETUP UTILITY when you start up the computer. Please press <F2> during the Power-On-Self-Test (POST) to enter the BIOS SETUP UTILITY, otherwise, POST will continue with its test routines.

If you wish to enter the BIOS SETUP UTILITY after POST, restart the system by pressing <Ctl> + <Alt> + <Delete>, or by pressing the reset button on the system chassis. You may also restart by turning the system off and then back on.

Because the BIOS software is constantly being updated, the following BIOS setup screens and descriptions are for reference purpose only, and they may not exactly match what you see on your screen.

3.1.1 BIOS Menu Bar

The top of the screen has a menu bar with the following selections:

Main	To set up the system time/date information
Advanced	To set up the advanced BIOS features
H/W Monitor	To display current hardware status
Boot	To set up the default system device to locate and load the Operating System
Security	To set up the security features
Exit	To exit the current screen or the BIOS SETUP UTILITY

Use < ← > key or < → > key to choose among the selections on the menu bar, and then press <Enter> to get into the sub screen.

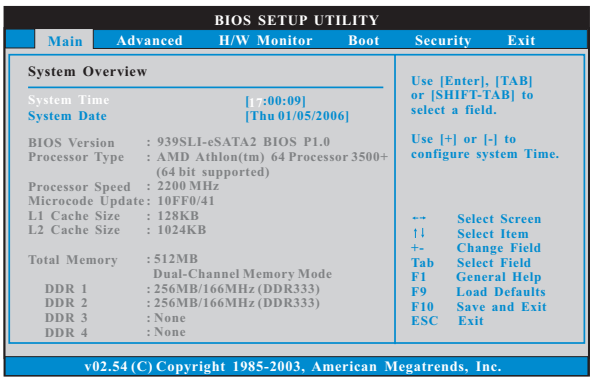
3.1.2 Navigation Keys

Please check the following table for the function description of each navigation key.

Navigation Key(s)	Function Description
← / →	Moves cursor left or right to select Screens
↑ / ↓	Moves cursor up or down to select items
+ / -	To change option for the selected items
<Enter>	To bring up the selected screen
<F1>	To display the General Help Screen
<F9>	To load optimal default values for all the settings
<F10>	To save changes and exit the BIOS SETUP UTILITY
<ESC>	To jump to the Exit Screen or exit the current screen

3.2 Main Screen

When you enter the BIOS SETUP UTILITY, the Main screen will appear and display the system overview



System Time [Hour:Minute:Second]

Use this item to specify the system time.

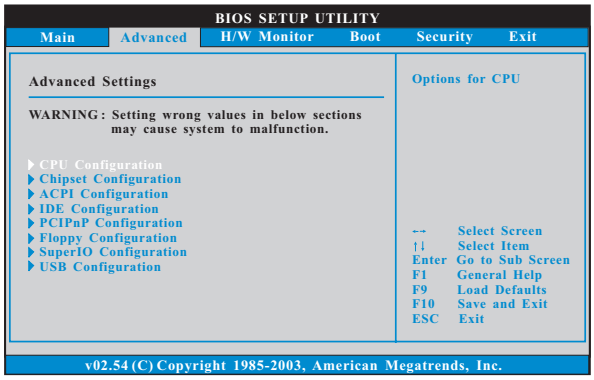
System Date [Day Month/Date/Year]

Use this item to specify the system date.

In the future, you may upgrade your AMD 939-Pin CPU to AMD 940-Pin (AM2) CPU by installing an add-on ASRock **AM2CPU Board** into future CPU Port on this motherboard

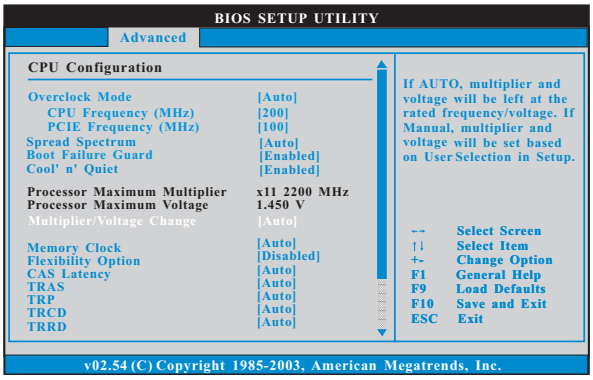
3.3 Advanced Screen

In this section, you may set the configurations for the following items: CPU Configuration, Chipset Configuration, ACPI Configuration, IDE Configuration, PCIPnP Configuration, Floppy Configuration, SuperIO Configuration, and USB Configuration.



Setting wrong values in this section may cause the system to malfunction.

3.3.1 CPU Configuration


BIOS SETUP UTILITY
Advanced
CPU Configuration
Overclock Mode [Auto]
CPU Frequency (MHz) [200]
PCIE Frequency (MHz) [100]
Spread Spectrum [Auto]
Boot Failure Guard [Enabled]
Cool' n' Quiet [Enabled]
Processor Maximum Multiplier x11 2200 MHz
Processor Maximum Voltage 1.450 V
Multiplier/Voltage Change [Auto]
Memory Clock [Auto]
Flexibility Option [Disabled]
CAS Latency [Auto]
TRAS [Auto]
TRP [Auto]
TRCD [Auto]
TRRD [Auto]
If AUTO, multiplier and voltage will be left at the rated frequency/voltage. If Manual, multiplier and voltage will be set based on User Selection in Setup.
↔ Select Screen
↑↓ Select Item
+- Change Option
F1 General Help
F9 Load Defaults
F10 Save and Exit
ESC Exit
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Overclock Mode

Use this to select Overclock Mode. The default value is [Auto]. Cnfiguration options: [Auto], [CPU, PCIE, Sync.] and [CPU, PCIE, Async.].

CPU Frequency (MHz)

Use this option to adjust CPU frequency. The range is from 90MHz to 340MHz. The default value is [200].

PCIE Frequency (MHz)

Use this option to adjust PCIE frequency. The range is from 90MHz to 170MHz. The default value is [100].

PCI Frequency (MHz)

Use this option to adjust PCI frequency. This option only appears when you set overclock mode to [CPU, PCIE, Sync.] or [CPU, PCIE, Async.]. Con figuration options: [33.33], [33.80], [34.28], [34.78], [35.29], [35.82], [36.36], [36.92], [37.50] and [Sync. with CPU]. The default value is [33.33].

Spread Spectrum

This feature will be set to [Auto] as default.

Boot Failure Guard

Enable or disable the feature of Boot Failure Guard.

Cool 'n' Quiet

Use this item to enable or disable AMD's Cool 'n' Quiet™ technology.

Processor Maximum Multiplier

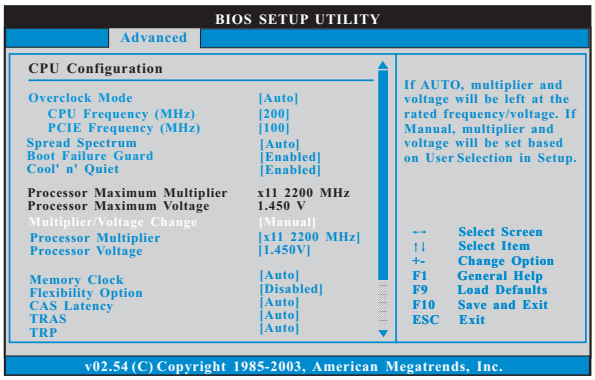
It will display Processor Maximum Multiplier for reference.

Processor Maximum Voltage

It will display Processor Maximum Voltage for reference.

Multiplier/Voltage Change

This item is set to [Auto] by default. If it is set to [Manual], you may adjust the value of Processor Multiplier and Processor Voltage. However, it is recommended to keep the default value for system stability.


BIOS SETUP UTILITY
Advanced
CPU Configuration
Overclock Mode [Auto]
CPU Frequency (MHz) [200]
PCIE Frequency (MHz) [100]
Spread Spectrum [Auto]
Boot Failure Guard [Enabled]
Cool' n' Quiet [Enabled]
Processor Maximum Multiplier x11 2200 MHz
Processor Maximum Voltage 1.450 V
Multiplier/Voltage Change [Manual]
Processor Multiplier [x11 2200 MHz]
Processor Voltage [1.450V]
Memory Clock [Auto]
Flexibility Option [Disabled]
CAS Latency [Auto]
TRAS [Auto]
TRP [Auto]
If AUTO, multiplier and voltage will be left at the rated frequency/voltage. If Manual, multiplier and voltage will be set based on User Selection in Setup.
→← Select Screen
↑↓ Select Item
+- Change Option
F1 General Help
F9 Load Defaults
F10 Save and Exit
ESC Exit
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Processor Multiplier

This item will show when “Multiplier/Voltage Change” is set to [Manual]; otherwise, it will be hidden. You may set the value from [x8 1600 MHz] up to [x25 5000 MHz] but no higher than the value of “Processor Maximum Multiplier”. For example, if the value of “Processor Maximum Multiplier” is [x11 2200 MHz], the actual value of multiplier will be [x11 2200 MHz] even if you set this item to a value higher than [x11 2200 MHz]. However, for system stability, it is not recommended to adjust the value of this item.

Processor Voltage

This item will show when “Multiplier/Voltage Change” is set to [Manual]; otherwise, it will be hidden. For safety and system stability, it is not recommended to adjust the value of this item.

Memory Clock

This item can be set by the code using [Auto]. You can set one of the standard values as listed: [133 MHz (DDR266)], [166 MHz (DDR333)], [200 MHz (DDR400)].

Flexibility Option

The default value of this option is [Disabled]. It will allow better tolerance for memory compatibility when it is set to [Enabled].

CAS Latency

Use this item to adjust the means of memory accessing. Configuration options: [Auto], [2.0], [3.0], and [2.5].

TRAS

Use this to adjust TRAS values. Configuration options: [Auto], [5CLK], [6CLK], [7CLK], [8CLK], [9CLK], [10CLK], [11CLK], [12CLK], [13CLK], [14CLK], and [15CLK].

TRP

Use this to adjust TRP values. Configuration options: [Auto], [2CLK], [3CLK], [4CLK], [5CLK], and [6CLK].

TRCD

Use this to adjust TRCD values. Configuration options: [Auto], [2CLK], [3CLK], [4CLK], [5CLK], and [6CLK].

TRRD

Use this to adjust TRRD values. the default value is [Auto].

TRC

Use this to adjust TRC values. The default value is [Auto].

MA Timing

Use this to adjust values for MA timing. Configuration options: [Auto], [2T], [1T]. The default value is [Auto].

Burst Length

Burst length can be set to 8, 4, or 2 beats.

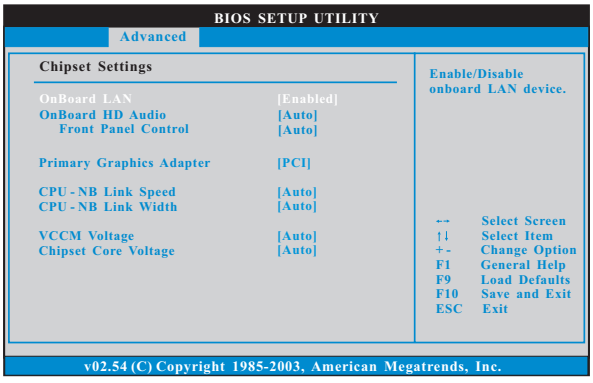
Bank Interleaving

Interleaving allows memory accesses to be spread out over banks on the same node, or accross nodes, decreasing access contention.

Memory Hole

Use this to enable or disable memory hole. The default value is [Disabled].

3.3.2 Chipset Configuration



OnBoard LAN

This allows you to enable or disable the onboard LAN feature.

OnBoard HD Audio

Select [Auto], [Enabled] or [Disabled] for the onboard HD Audio feature. If you select [Auto], the onboard HD Audio will be disabled when PCI Sound Card is plugged.

Front Panel Control

Select [Auto], [Enabled] or [Disabled] for the onboard HD Audio Front Panel.

Primary Graphics Adapter

This item will switch the PCI Bus scanning order while searching for video card. It allows you to select the type of Primary VGA in case of multiple video controllers. The default value of this feature is [PCI]. Configuration options: [PCI] and [PCIE].

CPU - NB Link Speed

This feature allows you selecting CPU to NB link frequency. Configuration options: [Auto], [200 MHz], [400 MHz], [600 MHz], [800 MHz], and [1000 MHz].

CPU - NB Link Width

This feature allows you selecting CPU to NB link width. Configuration options: [Auto], [8 BIT], and [16 BIT].

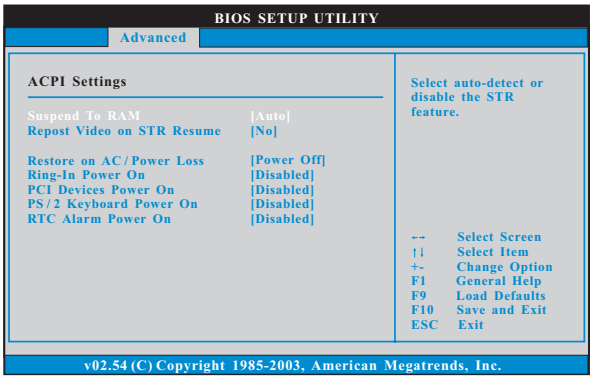
VCCM Voltage

This option allows you to set VCCM. The default value is [Auto]. Configuration options: [High], [Middle], [Low], and [Auto].

Chipset Core Voltage

This option allows you to set chipset core voltage. The default value is [Auto]. Configuration options: [High], [Middle], [Low], and [Auto].

3.3.3 ACPI Configuration


BIOS SETUP UTILITY
Advanced
ACPI Settings
Suspend To RAM [Auto]
Repost Video on STR Resume [No]
Restore on AC/Power Loss [Power Off]
Ring-In Power On [Disabled]
PCI Devices Power On [Disabled]
PS/2 Keyboard Power On [Disabled]
RTC Alarm Power On [Disabled]
Select auto-detect or disable the STR feature.
→← Select Screen
↑↓ Select Item
+- Change Option
F1 General Help
F9 Load Defaults
F10 Save and Exit
ESC Exit
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Suspend to RAM

Use this item to select whether to auto-detect or disable the Suspend-to-RAM feature. Select [Auto] will enable this feature if the OS supports it. If you set this item to [Disabled], the function "Repost Video on STR Resume" will be hidden.

Repost Video on STR Resume

This feature allows you to repost video on STR resume.(STR refers to suspend to RAM.)

Restore on AC/Power Loss

This allows you to set the power state after an unexpected AC/power loss. If [Power Off] is selected, the AC/power remains off when the power recovers. If [Power On] is selected, the AC/power resumes and the system starts to boot up when the power recovers.

Ring-In Power On

Use this item to enable or disable Ring-In signals to turn on the system from the power-soft-off mode.

PCI Devices Power On

Use this item to enable or disable PCI devices to turn on the system from the power-soft-off mode.

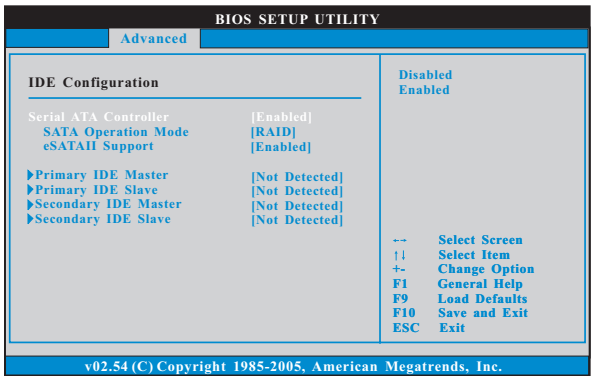
PS/2 Keyboard Power On

Use this item to enable or disable PS/2 keyboard to turn on the system from the power-soft-off mode.

RTC Alarm Power On

Use this item to enable or disable RTC (Real Time Clock) to power on the system.

3.3.4 IDE Configuration



Serial ATA Controller

Enable the SATA controller by selecting [Enabled]. The default value of this option is [Enabled]. Configuration options: [Enabled] and [Disabled].

SATA Operation Mode

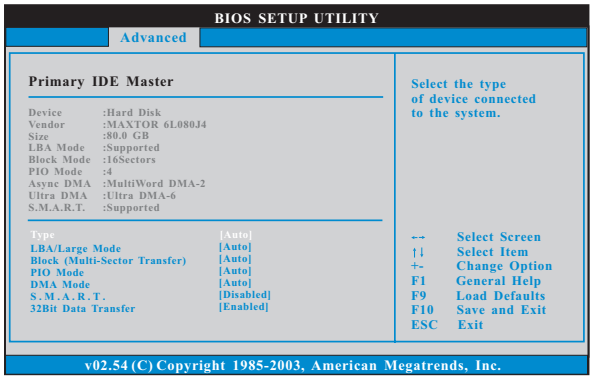
Use this item to adjust SATA Operation Mode. The default value of this option is [RAID]. Configuration options: [RAID], [non-RAID] and [AHCI].

eSATAII Support

Use this item to enable or disable eSATAII support. The default value of this option is [Enabled]. Configuration options: [Enabled], [Disabled].

IDE Device Configuration

You may set the IDE configuration for the device that you specify. We will use the “Primary IDE Master” as the example in the following instruction, which can be applied to the configurations of “Primary IDE Slave”, “Secondary IDE Master”, and “Secondary IDE Slave” as well.



TYPE

Use this item to configure the type of the IDE device that you specify. Configuration options: [Not Installed], [Auto], [CD/DVD], and [ARMD].

[Not Installed]: Select [Not Installed] to disable the use of IDE device.

[Auto]: Select [Auto] to automatically detect the hard disk drive.

After selecting the hard disk information into BIOS, use a disk utility, such as FDISK, to partition and format the new IDE hard disk drives. This is necessary so that you can write or read data from the hard disk. Make sure to set the partition of the Primary IDE hard disk drives to active.

[CD/DVD]: This is used for IDE CD/DVD drives.

[ARMD]: This is used for IDE ARMD (ATAPI Removable Media Device), such as MO.

LBA/Large Mode

Use this item to select the LBA/Large mode for a hard disk > 512 MB under DOS and Windows; for Netware and UNIX user, select [Disabled] to disable the LBA/Large mode.

Block (Multi-Sector Transfer)

The default value of this item is [Auto]. If this feature is enabled, it will enhance hard disk performance by reading or writing more data during each transfer.

PIO Mode

Use this item to set the PIO mode to enhance hard disk performance by optimizing the hard disk timing.

DMA Mode

DMA capability allows the improved transfer-speed and data-integrity for compatible IDE devices.

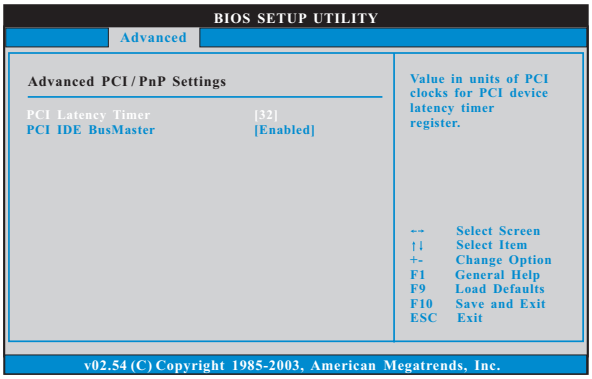
S.M.A.R.T.

Use this item to enable or disable the S.M.A.R.T. (Self-Monitoring, Analysis, and Reporting Technology) feature. Configuration options: [Disabled], [Auto], [Enabled].

32-Bit Data Transfer

Use this item to enable 32-bit access to maximize the IDE hard disk data transfer rate.

3.3.5 PCIPnP Configuration


BIOS SETUP UTILITY
Advanced
Advanced PCI / PnP Settings
PCI Latency Timer [32]
PCI IDE BusMaster [Enabled]
Value in units of PCI clocks for PCI device latency timer register.
←→ Select Screen
↑↓ Select Item
+- Change Option
F1 General Help
F9 Load Defaults
F10 Save and Exit
ESC Exit
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Setting wrong values in this section may cause the system to malfunction.

PCI Latency Timer

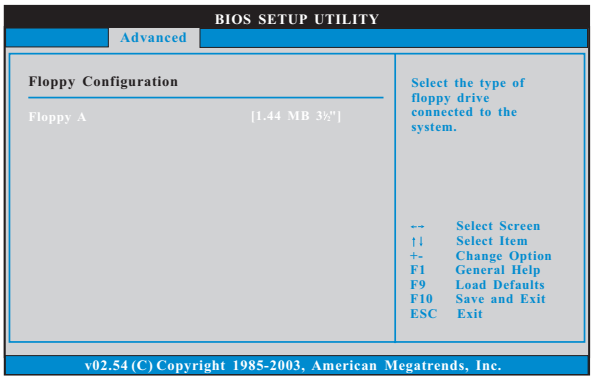
The default value is 32. It is recommended to keep the default value unless the installed PCI expansion cards' specifications require other settings.

PCI IDE BusMaster

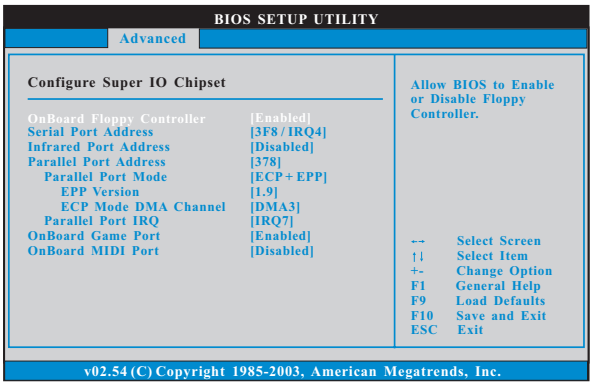
Use this item to enable or disable the PCI IDE BusMaster feature.

3.3.6 Floppy Configuration

In this section, you may configure the type of your floppy drive.



3.3.7 Super IO Configuration


BIOS SETUP UTILITY
Advanced
Configure Super IO Chipset
OnBoard Floppy Controller [Enabled]
Serial Port Address [3F8 / IRQ4]
Infrared Port Address [Disabled]
Parallel Port Address [378]
Parallel Port Mode [ECP + EPP]
EPP Version [1.9]
ECP Mode DMA Channel [DMA3]
Parallel Port IRQ [IRQ7]
OnBoard Game Port [Enabled]
OnBoard MIDI Port [Disabled]
Allow BIOS to Enable or Disable Floppy Controller.
↔ Select Screen
↑↓ Select Item
+- Change Option
F1 General Help
F9 Load Defaults
F10 Save and Exit
ESC Exit
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OnBoard Floppy Controller

Use this item to enable or disable floppy drive controller.

Serial Port Address

Use this item to set the address for the onboard serial port or disable it. Configuration options: [Disabled], [3F8 / IRQ4], [2F8 / IRQ3], [3E8 / IRQ4], [2E8 / IRQ3].

Infrared Port Address

Use this item to set the address for the onboard infrared port or disable it. Configuration options: [Disabled], [2F8 / IRQ3], and [2E8 / IRQ3].

Parallel Port Address

Use this item to set the address for the onboard parallel port or disable it. Configuration options: [Disabled], [378], and [278].

Parallel Port Mode

Use this item to set the operation mode of the parallel port. The default value is [ECP+EPP]. If this option is set to [ECP+EPP], it will show the EPP version in the following item, "EPP Version". Configuration options: [Normal], [Bi-Directional], and [ECP+EPP].

EPP Version

Use this item to set the EPP version. Configuration options: [1.9] and [1.7].

ECP Mode DMA Channel

Use this item to set the ECP mode DMA channel. Configuration options: [DMA0], [DMA1], and [DMA3].

Parallel Port IRQ

Use this item to set the IRQ for the parallel port. Configuration options: [IRQ5] and [IRQ7].

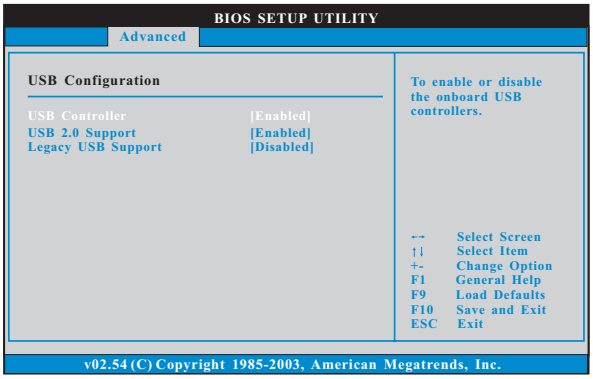
OnBoard Game Port

Use this item to enable the Game Port or disable it.

OnBoard MIDI Port

Use this itme to select the address for the MIDI Port or disable it. Configuration options: [Disabled], [300], and [330].

3.3.8 USB Configuration



USB Controller

Use this item to enable or disable the use of USB controller.

USB 2.0 Support

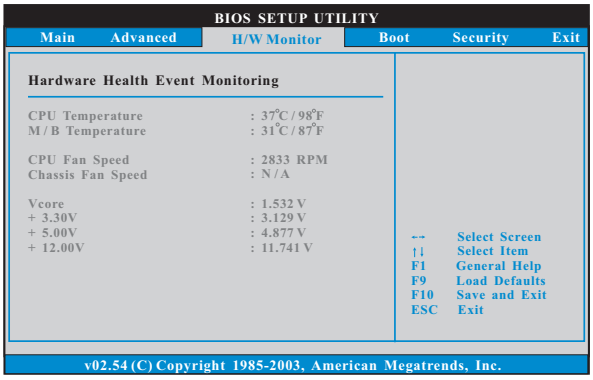
Use this item to enable or disable the USB 2.0 support.

Legacy USB Support

Use this item to enable or disable the support to emulate legacy I/O devices such as mouse, keyboard,... etc. Or you may select [Auto] so that the system will start to auto-detect; if there is no USB device connected, "Auto" option will disable the legacy USB support.

3.4 Hardware Health Event Monitoring Screen

In this section, it allows you to monitor the status of the hardware on your system, including the parameters of the CPU temperature, motherboard temperature, CPU fan speed, chassis fan speed, and the critical voltage.


BIOS SETUP UTILITY
Main Advanced H/W Monitor Boot Security Exit
Hardware Health Event Monitoring
CPU Temperature : 37°C / 98°F
M/B Temperature : 31°C / 87°F
CPU Fan Speed : 2833 RPM
Chassis Fan Speed : N/A
Vcore : 1.532 V
+ 3.30V : 3.129 V
+ 5.00V : 4.877 V
+ 12.00V : 11.741 V
←→ Select Screen
↑↓ Select Item
F1 General Help
F9 Load Defaults
F10 Save and Exit
ESC Exit
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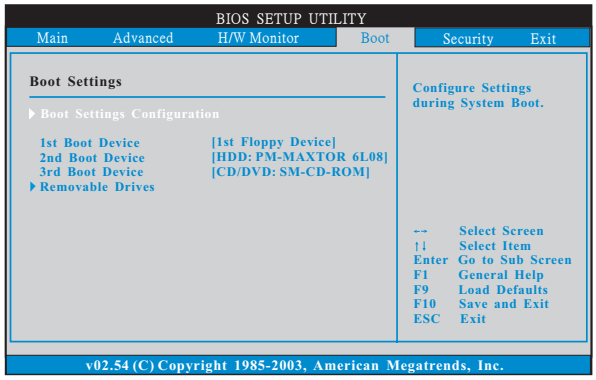
3.5 Boot Screen

In this section, it will display the available devices on your system for you to configure the boot settings and the boot priority.


BIOS SETUP UTILITY
Main Advanced H/W Monitor Boot Security Exit
Boot Settings
Boot Settings Configuration
1st Boot Device [1st Floppy Device]
2nd Boot Device [HDD: PM-MAXTOR 6L08]
3rd Boot Device [CD/DVD: SM-CD-ROM]
Removable Drives
Configure Settings during System Boot.
↔ Select Screen
↑↓ Select Item
Enter Go to Sub Screen
F1 General Help
F9 Load Defaults
F10 Save and Exit
ESC Exit
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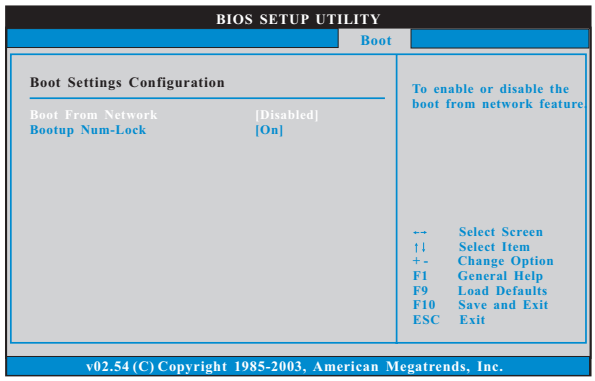
3.5.1 Boot Settings Configuration



Boot From Network

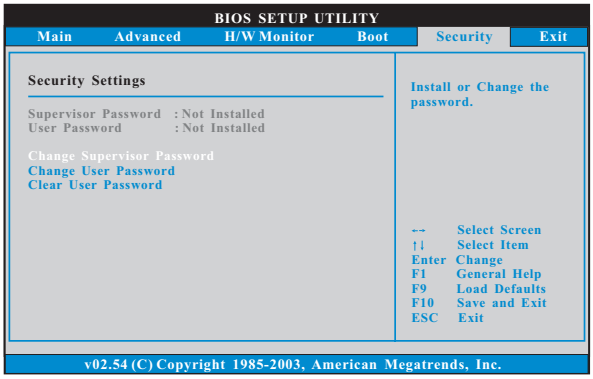
Use this item to enable or disable the Boot From Network feature.

Boot Up Num-Lock

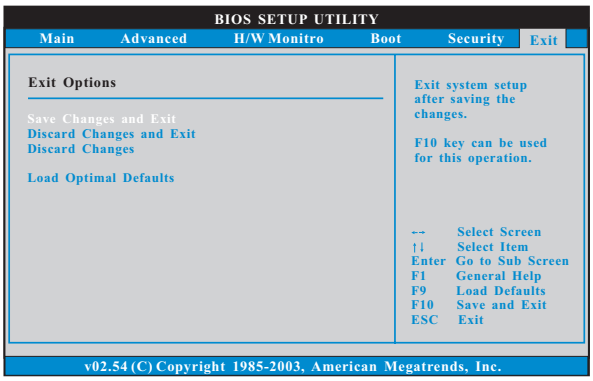
If this item is set to [On], it will automatically activate the Numeric Lock function after boot-up.

3.6 Security Screen

In this section, you may set or change the supervisor/user password for the system. For the user password, you may also clear it.



3.7 Exit Screen



Save Changes and Exit

When you select this option, it will pop-out the following message, "Save configuration changes and exit setup?" Select [OK] to save the changes and exit the BIOS SETUP UTILITY.

Discard Changes and Exit

When you select this option, it will pop-out the following message, "Discard changes and exit setup?" Select [OK] to exit the BIOS SETUP UTILITY without saving any changes.

Discard Changes

When you select this option, it will pop-out the following message, "Discard changes?" Select [OK] to discard all changes.

Load Optimal Defaults

When you select this option, it will pop-out the following message, "Load optimal defaults?" Select [OK] to load the default values for all the setup configurations.

4. Software Support

4.1 Install Operating System

This motherboard supports various Microsoft® Windows® operating systems: 2000 / XP / XP 64-bit. Because motherboard settings and hardware options vary, use the setup procedures in this chapter for general reference only. Refer to your OS documentation for more information.

4.2 Support CD Information

The Support CD that came with the motherboard contains necessary drivers and useful utilities that enhance the motherboard features.

4.2.1 Running The Support CD

To begin using the support CD, insert the CD into your CD-ROM drive. The CD automatically displays the Main Menu if "AUTORUN" is enabled in your computer. If the Main Menu did not appear automatically, locate and double click on the file "ASSETUP.EXE" from the BIN folder in the Support CD to display the menus.

4.2.2 Drivers Menu

The Drivers Menu shows the available devices drivers including ASRock Express GbL PCI Express LAN card driver if the system detects the installed devices. Please install the necessary drivers to activate the devices.

4.2.3 Utilities Menu

The Utilities Menu shows the applications software that the motherboard supports. Click on a specific item then follow the installation wizard to install it.

4.2.4 Contact Information

If you need to contact ASRock or want to know more about ASRock, welcome to visit ASRock's website at http://www.asrock.com; or you may contact your dealer for further information.

APPENDIX:
AMD's Cool 'n' Quiet™ Technology

For power-saving sake, it is strongly recommended to enable AMD's Cool 'n' Quiet™ technology under Windows system. When using this feature, please make sure to install "AMD Processor Driver" from the "Support CD" first.

If you are using Windows 2000 / XP/ XP 64-bit operating system, please follow the instruction below to enable AMD's Cool 'n' Quiet™ technology:

1. From the Windows 2000 / XP/ XP 64-bit operating system, click the Start button. Select Settings, then Control Panel.
2. Switch to Classic View. (for Windows XP only)
3. Double-click the Display icon in the Control Panel then select the Screen Saver tab.
4. Click the "Power…" button. The following dialog box appears.
5. From the Power schemes combo list box, select **Minimal Power Management**.
6. Click OK to implement settings.